

# CLAIMS:

1. A fibrous web containing a filler, which is a substance in a granular form, having a rotationally symmetrical shape and an inner part and a crust part, whereby the  
5 density of the inner part is lower than the crust part, **characterized** in that
  - the density of the inner part is about 10 to 90% of that of the crust part, and
  - the amount of filler used is 3 to 60% of the amount of solids.
2. A fibrous web according to Claim 1, **characterized** in that the density of the inner part of the filler granule is about 10 to 90%, preferably about 40 to 80% of that  
10 of the crust part.
3. A fibrous web according to Claim 1, **characterized** in that the filler granule consists of pigment particles and a binder.
4. A fibrous web according to Claim 1, **characterized** in that the density of the pigment particles is 1500 to 7000 kg/m<sup>3</sup>, preferably about 2000 to 3100 kg/m<sup>3</sup>.
- 15 5. A fibrous web according to any of the preceding claims, **characterized** in that the density of the filler granule is 400 to 6300 kg/m<sup>3</sup>, preferably 600 to 2800 kg/m<sup>3</sup>, whereby the density of the inner part is about 50 to 5700 kg/m<sup>3</sup>, preferably 700 to 1500 kg/m<sup>3</sup>, and the density of the crust part is about 600 to 6300 kg/m<sup>3</sup>, preferably 1700 to 2000 kg/m<sup>3</sup>.
- 20 6. A fibrous web according to any of the preceding claims, **characterized** in that the inner part of the filler granule contains rougher pigment particles in relation to the crust part.
7. A fibrous web according to any of the preceding claims, **characterized** in that the porosity of the inner part of the filler granule is higher than that of the crust part,  
25 whereby the pore volume of the inner part is 10 to 70% by volume, preferably about 30 to 60% by volume.
8. A fibrous web according to any of the preceding claims, **characterized** in that the crust part of the filler granule comprises metal silicate, metal sulphate or metal carbonate particles, which are bound to one another by means of a cross-linked  
30 binder, whereby they form a dense coat that surrounds the inner part.

9. A fibrous web according to Claim 1, **characterized** in that the filler particles of the filler granule comprise any inorganic substance, for example, kaolins, ground or precipitated calcium carbonates.
10. A fibrous web according to any of the preceding claims, **characterized** in that the particle size ( $\phi$ ) of the granulated filler is 1 to 100  $\mu\text{m}$ , preferably 5 to 50  $\mu\text{m}$ .
11. A fibrous web according to any of the preceding claims, **characterized** in that the substance in the granular form is plastically deformable under the effect of pressure and/or temperature.
12. A fibrous web according to any of the preceding claims, **characterized** in containing 3 to 30% by weight of the filler in granular form, whereby the bonding strength of the fibrous web is essentially the same as that of a corresponding fibrous web that contains no filler.
13. A fibrous web according to any of the preceding claims, **characterized** in containing over 30% by weight of the filler in granular form.
14. A method for manufacturing a fibrous web, such as a board, paper or non-woven web containing a filler and having a good tensile strength, the method comprising the inclusion of the filler in the fibrous web, the filler being a substance in a granular form and having a rotationally symmetrical shape and an inner part and a crust part, and the density of the inner part being lower than the crust part, **characterized** in that the density of the inner part is about 10 to 90% of that of the crust part, and the amount of filler used is 3 to 60 % of the amount of solids.
15. A method according to Claim 14, **characterized** in that at least 10% by weight of the filler of the fibrous web consists of the granulated filler, whereby its tensile strength is at least 10% better than that of a corresponding fibrous web that contains a mineral pigment that is essentially fully ground.
16. A method according to Claim 14 or 15, **characterized** in that a granulated filler is used, the particle size ( $\phi$ ) of which is 1 to 100  $\mu\text{m}$ , preferably 5 to 50  $\mu\text{m}$ .
17. A method according to Claims 14 to 16, **characterized** in that the amount of granulated filler used is 3 to 60% of the web's dry weight.
18. A method according to Claims 14 to 17, **characterized** in that the fibrous web containing the filler is coated with a coating composition.

19. A method according to Claims 14 to 18, **characterized** in that to obtain a predefined level of opacity, the amount of coating pigment used is 30% smaller than when providing a corresponding level of opacity with a fibrous web that contains powdery mineral pigments.
- 5 20. A method according to Claims 14 to 19, **characterized** in that the substance in the granular form is plastically deformable under the effect of pressure and/or temperature.
- 10 21. A method for improving the fire resistance properties of a fibrous web that contains a filler and has a good tensile strength, whereby the filler is a massive substance in a granular form, having a rotationally symmetrical shape and an inner part and a crust part, and the density of the inner part is lower than the crust part, **characterized** in that the density of the inner part is about 10 to 90% of that of the crust part, and the amount of filler used is 3 to 60 % of the amount of dry matter.
- 15 22. A method according to Claim 21, **characterized** in that the substance in the granular form forms at least 10% by weight of the filler of the fibrous web.
23. A method according to Claim 21, **characterized** in that the substance in the granular form forms 50 to 100% of the filler of the fibrous web.
- 20 24. A method according to Claim 21, **characterized** in that the substance in the granular form is plastically deformable under the effect of pressure and/or temperature.